



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,933	08/28/2006	Anton Esser	294818US0PCT	2785

22850 7590 08/11/2009
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
----------	--------------

1791

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

08/11/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/590,933	Applicant(s) ESSER ET AL.	
	Examiner DENNIS CORDRAY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's amendments filed 4/24/2009 have overcome the rejections under 35 U.S.C. 101 and 35 U.S.C. 112, 2nd par. The indicated rejections have been withdrawn.

Applicant's arguments regarding the rejections over prior art have been fully considered but they are not persuasive.

The data presented in support of the claimed invention comprise adding to a coated broke train approximately 0.009 wt-% (based on total dry paper stock as calculated from the data provided) of a single polymer having a molecular weight of 2,000,000 and comprising 10 mol% vinylamine and 90 mol% N-vinylformamide, forming a paper stock of 4% concentration comprising the coated broke and polymer, diluting the stock to 0.8% concentration and forming paper. For comparison data, the polymer was replaced by the same weight of either polyaluminum chloride, a 95 mol% polyvinylamine having a molecular weight of 400,000, or a 30 mol% polyvinylamine having a molecular weight of 400,000.

The data are not commensurate in scope with the claimed invention, which embody the steps of preparing a paper stock of any concentration deemed to be high consistency, metering into the stock a at least one homo- or co-polymer having any amount of vinylamine units; a degree of hydrolysis from 1 to 20% (hydrolysis of any species; N-vinylformamide is not necessarily the hydrolyzed species in Claim 1) and having any molecular weight greater than or equal to 1,000,000; diluting the stock to any concentration deemed to be low consistency and draining the stock.

Art Unit: 1791

Applicant argues that the prior art does not recognize the significance of the degree of hydrolysis or that polyvinylamine is any better than other coagulants. Absent convincing evidence of unobvious results commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use any polyvinylamine disclosed in the prior art, including those overlaying the claimed composition, as a functionally equivalent option and to have a reasonable expectation of success.

Similar arguments are used regarding the double patenting rejections, and a similar response applies. The copending applications claim a degree of hydrolysis overlaying the claimed ranges. One of ordinary skill in the art would have found it obvious to use the method of addition of Auhorn et al for the vinylamine polymer and other retention aid to obtain the currently claimed subject matter and have a reasonable expectation of success.

The rejections over the cited prior art are maintained and have been amended to include amended subject matter. In addition, new grounds of rejection are presented due to the newly added claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 16 recite the limitation "the low-consistency stock" in Claim 9. There is insufficient antecedent basis for this limitation in the claims.

Claims 17 recites the limitation "the polymers containing vinylamine units" in Claim 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites a method of obtaining polymers which comprise vinylamine units. The claim depends from Claim 9, which fails to recite that the polymers comprise vinylamine units, thus the relationship between the two claims is not clear. Are the polymers of Claim 14 which comprise vinylamine units different from the hydrolyzed homo- or copolymer of N-vinylcarboxamide in Claim 9 having a degree of hydrolysis from 1 to 20 mol%?

Claim 15 recites hydrolyzed homopolymers of N-vinylformamide having a degree of hydrolysis from 1 to 20 mol% are used as polymers containing vinylamine units. The claim depends from Claim 14, which fails to recites a method of obtaining polymers which comprise vinylamine units. It is not clear if the polymers of Claim 15 are the same polymers as those of Claim 14 or if they are different polymers.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-10 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (5501774) in view of Hund et al (6797785).

Art Unit: 1791

Claims 1, 5-7, 9 and 14-16: Burke discloses a process of making paper comprising preparing a aqueous thickstock (high consistency stock) consisting of a feed suspension of filler and cellulosic fiber, adding a cationic coagulating agent to the thickstock, making an aqueous thinstock (low consistency stock) by diluting the thickstock from the feed suspension, adding an anionic particulate material and a polymeric retention aid to the thinstock that is formed from the thickstock, and draining the thinstock (Abs; col 2, lines 4-22). The cationic coagulating agent has a molecular weight below about 2 million and can be a polyamine (col 4, lines 5-13).

Burke does not disclose polymers containing vinylamine units or the degree of hydrolysis. Burke does not disclose metering the vinylamine containing polymers. Burke does disclose a polyamine as a coagulant (col 4, lines 11-12).

Hund et al discloses that vinylamine containing polymers made by polymerizing vinylformamide as a homopolymer or copolymer followed by hydrolysis of from 20 to 70% of the vinylformamide units to vinylamine are used as coagulants or flocculants in papermaking. The vinylamine containing polymers result in improved retention, formation and draining (Abs; col 1, lines 24-45; col 3, lines 45-47; col 4, lines 11-16 and 27-30; col 5, line 60 to col 7, line 28). The disclosed degree of hydrolysis overlaps the claimed range.

The art of Burke, Hund et al and the instant invention is analogous as pertaining to the use of coagulants in papermaking. It would have been obvious to one of ordinary skill in the art to use vinylamine containing polymers as the coagulant in the process of Burke in view of Hund et al as a functionally equivalent option to obtain the benefits

Art Unit: 1791

disclosed by Hund et al. Absent convincing evidence of unobvious properties due to the method of addition, metering the additives would have been obvious as a functionally equivalent option for addition. Reduction of the deposits in the wire part, press section or drying section of the paper machine would have also been obvious because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent or at least obvious.

Claims 4 and 13: Burke discloses the solids content of the suspension to be coagulated (thickstock) of from 2.5% to 10%. The solids content of the thinstock is from about 0.25% to 2% by weight (col 3, lines 24-32 and 56-59).

Claims 8 and 17: Burke discloses the addition amount of coagulant from 0.005% to 2% based on the dry weight of the suspension (col 4, lines 28-31).

Claims 10 and 18: Burke discloses that the filler in the thickstock usually originates in part from recycled cellulosic material, such as broke of filled or coated paper, thus coated broke is disclosed.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auhorn et al (6083348) in view of Burkert et al (4444667) as evidenced by Langley et al (4753710).

Art Unit: 1791

Claims 1-3, 5-7, 9, 11, 12 and 14-16: Auhorn et al discloses a method of making paper comprising metering polymers containing vinylamine units as a retention aid, drainage aid and flocculant to a main stream papermaking stock having a consistency from 0.1 to 15%, and diluting the stock in the headbox with up to 35% by volume, based on total headbox feed, of a dilution stream consisting of white water. The polymers have molecular weight from 10,000 to 2,000,000. The treated stock is drained to make paper (Abs; col 2, lines 13-26 and 34-44; col 5, lines 59-60). Where the retention system comprises cationic polymers (e.g.- polymers containing vinylamine units) and finely divided solids, the cationic polymers are all added to the main stream (high consistency) stock and the finely divided solids to the dilution stream that is mixed with the main stream in the headbox to form a low consistency stock. Alternatively, in some embodiments, from 60-95% of the retention aids are added to the main stream and the remainder of the retention aid is metered into the dilution stream that is mixed with the main stream in the headbox to form a low consistency stock (col 6, lines 22-34). The range of consistencies overlays the claimed ranges for high consistency stock.

Auhorn et al does not disclose the degree of hydrolysis of the polymers containing vinylamine units. Auhorn does disclose that the polymers containing vinylamine units are made by hydrolysis of homopolymers or copolymers of N-vinylformamide and references EP-071050 as teaching the process (col 2, lines 53-58). Burkert et al (4444667) is in the same patent family as and will be used as the English translation of EP-071050.

Art Unit: 1791

Burkert et al discloses preparing a vinylamine containing polymer by homopolymerization of N-vinylformamide followed by hydrolysis of 10-90% of the formyl groups (Abs).

The art of Auhorn et al, Burkert et al and the instant invention is analogous as pertaining to the use of vinylamine containing polymers in papermaking. It would have been obvious to one of ordinary skill in the art to use vinylamine containing polymers having the claimed hydrolysis as retention aid, drainage aid and flocculant in the process of Auhorn in view of Burkert et al as suitable polymers disclosed by Auhorn et al.

Claims 4 and 13: Although not explicitly disclosed by Auhorn et al, it would have been obvious to dilute the main stream stock sufficiently to provide a consistency below 1.5% as a typical consistency of papermaking thin stock (see Langley et al, col 8, lines 35-39 if evidence is needed).

Claims 8 and 17: Auhorn discloses that the amount of addition of retention aid, drainage aid and flocculant metered into the main stream is from 0.005% to 1% by weight of the dry paper (col 2, lines 41-44).

Claims 10 and 18: Auhorn et al discloses an example wherein the stock comprises coated broke (col 7, lines 46-51, Example 3), thus a high consistency stock comprising coated broke is disclosed or, at least, would have been obvious to one of ordinary skill in the art.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3, 5-8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 6, 8-10 and 12 of copending Application No. 11/719826 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking pulp, and dewatering (draining) the pulp. An anionic polymeric compound is also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the anionic polymer to low consistency stock. Auhorn et al discloses a retention system comprising adding a polyvinylamine polymer to high consistency stock, diluting the stock with a dilution stream to form low consistency stock

Art Unit: 1791

and adding the anionic polymer (silica or organic polymer particles) with the dilution stream (Abs; col 2, lines 30-58; col 4, line 67 to col 5, line 23; col 6, lines 22-34). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3, 5-6 and 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2 and 6 of copending Application No. 11/574677 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking stock, draining the stock, forming and drying a sheet. A cationic or nonionic polyacrylamide retention aid is also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the cationic or nonionic polyacrylamide to low consistency stock. Auhorn et al discloses adding up to 95% of a mixture of retention aids comprising, in some embodiments, a polyvinylamine polymer and a cationic polyacrylamide to high consistency stock, and diluting the stock with a dilution stream to form low consistency stock and adding the remainder of at least 5% of the retention aids with the dilution stream (Abs; col 2, lines 30-65; col 4, line 67 to col 5, line 23). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Claims 1-3, 5, 6, 8 and 9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-5 of copending Application No. 12/065688 in view of Auhorn et al. The claims of the copending application embody adding polymers containing vinylamine units, made by hydrolysis of N-vinylformamide units in the claimed range, to papermaking pulp, and draining the stock to form a sheet. Anionic particulates, including an anionic organic polymer are also added. The copending claims do not recite adding the vinylamine polymer to high consistency stock, diluting the stock, and adding the anionic polymer to low consistency stock. Auhorn et al discloses a retention system comprising adding a polyvinylamine polymer to high consistency stock, diluting the stock with a dilution stream to form low consistency stock and adding the anionic inorganic and/or organic polymer particles with the dilution stream (Abs; col 2, lines 30-58; col 4, line 67 to col 5, line 23; col 6, lines 22-34). One of ordinary skill in the art would have found it obvious to add the vinylamine containing and retention aids as currently claimed in view of Auhorn et al.

This is a provisional obviousness-type double patenting rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1791

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791